

Patent claims

1. Method to generate a print image on a carrier material (40),
- 5 in that the surface of a print carrier (40) is coated with an ink-repelling or ink-attracting layer made from fountain solution (54),
- in a structuring process, ink-attracting regions and ink-repelling regions are generated corresponding to the structure of the print image to be printed,
- 10 ink that adheres to the ink-attracting regions and that is not absorbed by the ink-repelling regions is applied on the surface,
- the applied ink is transferred onto the carrier material (40) in the further course,
- 15 before a new structuring process on the same surface of the print carrier (10), this surface is cleaned and re-coated with an ink-repelling or ink-attracting layer (54),
- 20 before the application of the ink-repelling or ink-attracting layer (54), a wetting-aiding substance (52) is applied in molecular layer thickness on the surface of the print carrier (10),
- 25 a surfactant with hydrophilic molecule sections is used as a wetting-aiding substance (52), and
- in that the layer thickness for the wetting-aiding substance (52) is smaller than 0.1 μm .
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2. Method according to claim 1, in that a fountain solution (54) based on water is used as an ink-repelling layer.
3. Method according to any of the preceding claims, in that the layer thickness of the ink-repelling layer (54) is smaller than 1 μm .
4. Method according to any of the preceding claims, in that the surface of the print carrier (10) has a roughness that is smaller than the roughness used in the standard offset printing method.
5. Method according to claim 4, in that the average roughness R_z is smaller than 10 μm , preferably smaller than 5 μm .
6. Method according to claim 4 or 5, in that the average roughness value R_a of the surface of the print carrier (10) is smaller than 2 μm , preferably smaller than 1 μm .
7. Method according to any of the preceding claims, in that digitally-controlled radiation is used for structuring.
8. Method according to claim 7, in that the radiation of a laser system, a laser, laser diodes, LEDs or a laser diode array is used.
9. Method according to any of the preceding claims, in that a plurality of printing events ensues before a restructuring of the surface, whereby the print carrier (10) is inked multiple successive times.
10. Method according to any of the preceding claims, in that the surface of the print carrier (10) is a continuous band or a generated cylinder surface.

11. Method according to any of the preceding claims, in that an ink separation ensues before the transfer of the ink onto the carrier material (40).
12. Device to generate a print image on a carrier material (40),
5 in which means are provided via which

the surface of a print carrier (40) is coated with an ink-repelling or ink-attracting layer (54) made from fountain solution,
10 in a structuring process, ink-attracting regions and ink-repelling regions are generated corresponding to the structure of the print image to be printed,

ink that adheres to the ink-attracting regions and that is not absorbed by the
15 ink-repelling regions is applied on the surface,

the applied ink is transferred onto the carrier material (40) in the further course,

20 before a new structuring process on the same surface of the print carrier (10), this surface is cleaned and re-coated with an ink-repelling or ink-attracting layer (54),

via which, before the application of the ink-repelling or ink-attracting layer
25 (54), a wetting-aiding substance (52) is applied in molecular layer thickness on the surface of the print carrier (10),

a surfactant with hydrophilic molecule sections is used as a wetting-aiding substance (52), and
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whereby the layer thickness for the wetting-aiding substance (52) is smaller than 0.1 μm .

13. Device according to claim 12, in that a fountain solution (54) based on
5 water is used as an ink-repelling layer.
14. Device according to one of the preceding claims 12 or 13, in that the layer
thickness of the ink-repelling layer (54) is smaller than 1 μm .
- 10 15. Device according to any of the preceding claims 12 through 14, in that the
surface of the print carrier (10) has a roughness that is smaller than the
roughness used in the standard offset printing method.
16. Device according to claim 15, in that the average roughness R_z is smaller
15 than 10 μm , preferably smaller than 5 μm .
17. Device according to claim 15 or 16, in that the average roughness value R_a
of the surface of the print carrier (10) is smaller than 2 μm , preferably
smaller than 1 μm .
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18. Device according to any of the preceding claims 12 through 17, in that
digitally-controlled radiation is used for structuring.
19. Device according to claim 18, in that the radiation of a laser system, a laser,
25 laser diodes, LEDs or a laser diode array is used.